of penetrating ordinary media to a much higher degree than the usual X-rays, and that in attempting to traverse substances having high atomic weights, like uranium and thorium, a portion of the incident energy is transformed into radiation having the power of affecting photographic plates, ionizing gases, etc. Elster and Geitel have tested this by examining the intensity of the uranium radiation by both the electrical and photographic methods, the apparatus being placed first upon the surface of the earth and then several hundred meters underground in a mine, their idea being that the intensity of the radiation incident upon the uranium would be weakened by passing through the overlying mass of earth. No difference was found in the intensity of the uranium radiations under the two conditions.

To test the hypothesis of Crookes as to the radiation being caused by a transformation by the uranium of a portion of the kinetic energy of the molecules of air, the intensity of the radiation emitted by the uranium when in a vacuum was compared with that emitted when the metal was in the air. No difference was found.

The results of this work are hence unfavorable to either hypothesis.

M. and Mme. Curie have shown (*Comptes Rendus*, CXXVII., p. 175) that in pitchblende there is a substance similar in properties to bismuth, but which is strongly radio-active, and for it they have proposed the name Polonium. In *Comptes Rendus*, CXXVII., p. 1255, they give an account of their more recent researches in which they have been associated with M. G. Bémont upon this subject. They are led to the conclusion that there is still another new substance present, similar in properties to pure barium, but whose chloride is about nine hundred times as active as that of uranium. The new substance, provisionally called Radium, is distinguished by a hitherto unknown line in its spectrum. A. St.C. D.

BOTANICAL NOTES.

SARGENT'S SILVA OF NORTH AMERICA.

The appearance of Volume XII. of this magnificent work again directs attention to what will, for all time, be a monument to both author and publishers. Eight years ago the first volume appeared, and at more or less regular intervals the succeeding volumes, until the present one, which was originally designed to be the last. In these volumes we have 620 plates, thus more than making good the promise of author and publishers of fifty plates per volume. We have now the pleasant announcement by the publishers that, "as it has been found impracticable to include in this twelfth volume of Professor Sargent's great work the general index to the entire work, a thirteenth volume containing this index, together with descriptions and illustrations of recently discovered species, and such corrections of the original volumes as recent explorations have made necessary will be sent to subscribers without change as soon as ready."

The present volume includes descriptions and plates of *Larix* (3 species), *Picea* (7 species), *Tsuga* (4 species), *Pseudotsuga* (2 species) and *Abies* (10 species). We shall look with great interest for the appearance of the supplementary volume.

COMMENDABLE FREE-SEED DISTRIBUTION.

At last the United States Department of Agriculture has made a free distribution of seeds, which must commend itself to every scientific botanist or horticulturist in the country. We refer to the distribution to colleges of the sets of 'Economic Seeds,' prepared in the Seed Laboratory of the Division of Botany, by the lamented Gilbert H. Hicks, under the direction of Frederick V. Coville. The set as issued consists of five centuries, each enclosed in a shallow tray-like box, which is divided into rectangular spaces, each large enough to contain the seed-tubes. Each tube is numbered and labeled, and on the lid of the tray is an alphabetical list of all the species arranged under their appropriate families. It is a pleasure to note, moreover, that the most scrupulous care has been taken to secure accuracy in the nomenclature, which is of the strictly modern school, including double citation of authors and the uniform decapitalization of specific names. This distribution is a worthy and commendable labor of the National Department of Agriculture, and it reflects great credit upon the officers

who are responsible for its inception and successful execution.

THE STUDY OF IOWA SEDGES.

IN a recent bulletin of the Laboratories of Natural History of the State University of Iowa, Mr. R. I. Cratty contributes a valuable paper upon the sedges of Iowa.

The list includes the results of about thirty years of work by Iowa botanists, and brings together data relating to ten genera and one hundred and fourteen species. With regard to the nature of the sedge flora of Iowa, the author says that it is "characteristically Eastern and corresponds quite closely with that of the bordering States, and, though lying just east of the Great Plains, but one species, *Carex stenophylla* Wahl., has yet been found which does not occur east of the Mississippi River. The richest portion of the State in sedges is that bordering on this great waterway. This may be accounted for partly because of the greater diversity of soil, surface, woodland and prairie in that region, and partly because the natural agencies for the distribution of seeds and the greater rainfall combine to favor that portion of the State."

NORTH AMERICAN SEAWEEDS.

WITH the distribution of the eleventh fascicle of *Phytotheca Boreali-Americana* by Messrs. Collins, Holden and Setchell there comes the announcement of a new series, to consist of larger specimens, including such plants as *Nereocystis*, *Laminaria*, *Fucus*, *Agarum*, *Dictyoneuron*, etc. The fascicles of this series will be designated by letters, A, B, C, etc., and the specimens numbered with Roman numerals, I., II., III., etc., so as to avoid confusion with the other series. Moreover, the fascicles of the new series will contain twenty-five numbers each, instead of fifty, as in the old series. There will thus be two series running side by side, and the announcement is made that either one may be subscribed for separately or both may be taken simultaneously.

ARTHUR AND HOLWAY'S RUSTS.

FOUR years ago Dr. J. C. Arthur and Mr. E. W. D. Holway issued fascicle I of a distribution of specimens and figures of the Rusts under the title 'Uredineæ Exsiccatæ et Icones.' A few days ago the second fascicle was received, and it is so noteworthy as to call for a word here. It contains fifty-two packets of specimens, each accompanied by enlarged drawings of the spores, and in addition thirteen photomicrographs taken directly from prepared slides. When we remember that this fascicle is sent to subscribers for three dollars we may realize that it is entirely a labor of love. Its value to students of the Rusts is incalculable.

CHARLES E. BESSEY.

THE UNIVERSITY OF NEBRASKA.

CURRENT NOTES ON ANTHROPOLOGY.

COURSES AT THE ÉCOLE D'ANTHROPOLOGIE.

THE following courses, public and gratuitous, are given this winter at the School of Anthropology, Paris: (1) Prehistoric anthropology: its general principles and methods (Professor Capitan). (2) Zoological anthropology: Origin of man (Professor Mahoudeau). (3) Ethnography and Linguistics: French language and culture in the 12th and 13th centuries (Professor Lefèvre). (4) Ethnology: The Basques and Aquitanians (Professor Hervé). (5) Biological Anthropology: The struggle for life (Professor Laborde). (6) Anthropological Geography: America (Professor Schrader). (7) Physiological Anthropology: The sexes (Professor Manouvrier). (8) Sociology: China (Professor Letourneau). An extra course on North Africa will be given by Professor Zaborowski. There are two lectures a day on five days of the week.

THE MEANING OF 'RACE.'

THAT much abused word, 'race,' has been the stumbling-block of many writers. Anthropologists try to make it a zoological term, connoting certain identical physical features. How far this is from general acceptance is illustrated in the presidential address of Mr. Alfred Nutt before the Folk-lore Society. He says: "Outside the record of history, of literature, of art, of systematized thought, the word 'race' is, for me, void of meaning. When I speak of 'race' I have in mind a community which for a definite number of centuries has manifested itself in clearly defined products of the mind—has set